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ABSTRACT

Research literature on student perceptions of classroom environment is reviewed in this paper. The intent is to indicate the types of issues that have been addressed and to illustrate recent developments in the field of student perception. Seven categories of student perception are examined: (1) teachers and teacher behavior; (2) peers and peer relationships; (3) other school personnel; (4) causes of behavior (attribution theory); (5) self concept and self esteem within the classroom; (6) classroom climate and procedures; and (7) school procedures and practices. The value of the studies to future educational practice is noted, and suggestions are made for further research, including systematically mapping the student perception domain, charting developmental milestones, and studying contextual and methodological variables. A bibliography of over 100 research studies is appended. (FG)

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STUDENT PERCEPTIONS OF SCHOOLING

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Fourth Graders Talk About Achievement

> It takes a while to do your work. An' like, sometimes if you're smart, it feels like it took you five minutes to do it. But if you're not so smart, it takes you a long time and you say, "I'm never gonna get this done." And you tell yourself, "You can't." That's why you can't do it.
>
> What can you do, get born over again?
>
> Sometimes I feel I'm not doing anything right.
>
> It makes me feel like I'm stupid, just dumb, crazy stupid.
>
> It makes me feel well good and you go outside with that feeling.

Historically, the study of teaching has been dominated by simple input-output models of instructional effects. In this paradigm, teaching behaviors are identified or created, students are exposed to these conditions, and student output is measured. Typically, student mental processes are assumed without direct measurement or entirely ignored. In this tradition, students have been largely viewed as the passive recipients of instruction.

In recent years, we are witnessing a surge of interest in student thought and action as students engage in instruction and in classroom life. This focus is fueled by much dissatisfaction with the explanatory power of the process-product paradigm in teacher effectiveness research and by a growing recognition that students influence instruction and its outcomes as much as teachers do (Berliner, 1976; Doyle, 1977). Both Doyle and Berliner have pressed for more research about student information-processing responses during instruction which may mediate the impact of

teaching behaviors on learning outcomes. They argue for a mediating-process paradigm in the study of teaching that views variations in student learning outcomes to be a function of specific student responses to instructional stimuli. There is much to be learned here. As Berliner (1976) suggests "Researchers do not know how much of what is called skilled teaching is even perceived by the learner" (p. 10).

Interest in student thought has also been stimulated by the development of the field of social cognition. As defined by Flavell (1977), social cognition means:

> cognition of human objects and their doings. It includes perception, thinking and knowledge regarding the self, other people, social relations, social organizations and institutions--in general, our human social world. (p. 49)

Some theorists have argued that knowledge of the physical and social world is organized along similar principles (Chandler, 1977; Mischel, 1974; Simon, 1976). Because human construction of knowledge rests on an interaction of subject and object and occurs in a social context, a distinction between physical and social reality is highly arbitrary. Yet others have argued that social knowledge differs from physical knowledge because people do not behave with the same predictability that objects do (Damon, 1979; Glick, 1978). Damon (1979) emphasizes that interactions between people can be characterized by a mutuality of conduct and communication. This sense of the social world is interactively maintained (Garfinkel, 1967) and hence may display less stability and may be "more sensitive to current information contexts than physical knowledge" (Glick, p. 3, 1978).

Glick (1978) underscores the complex nature of the stimulus domain

which is critical to the development of social understanding. Even within the social domain, theorists have distinguished between the construction of intrapersonal concepts such as the self and extrapersonal concepts such as other persons or social institutions (Bem, 1972; Damon, 1979) and between knowledge of psychological, social system and moral events (Turiel, 1978), suggesting that these social maps are organized in different ways and may result in different kinds of understanding.

For children in our culture, "the school is . . . a social world of major significance" (Hartup, p. 946, 1979). Not surprisingly, it is an extremely complex stimulus domain to comprehend. Yet children negotiate the classroom daily and for many years of their young lives, taking up the role of student with all its varied demands and expectations. In much of the existing research on classrooms, however, we have tended to ignore the intelligence that children bring to this social situation. We are just beginning to undertake serious investigations of the student point of view about classroom processes.

The literature on social cognition can teach us that children (within the limits of their cognitive capacities) are active interpreters of the classroom reality, that children draw inferences about the cause and effect of behavior, but that such inferences are not always rational, and that children's views and adults' views of the classroom reality are not necessarily synonomous and hence may promote miscommunication. In turn, our investigations of children's understanding of classroom phenomena can be informative about the role of classroom context in influencing children's thinking and about the specific social life challenges that the classroom presents to the developing child. As Hartup (1979)

suggests, our knowledge of this realm of experience is shockingly slim.

The importance of a social cognitive framework for understanding classroom life has been underscored in two recent papers. Gordon (1981) has reviewed the state of developmental social cognition research with the explicit purpose of alerting educational researchers and practitioners to its potential contribution for conceptualizing and ultimately improving classroom processes. Swarthout (1980) has analysed and contrasted four distinct research traditions that have uniquely contributed to our knowledge base in social cognition, and applied each of these to the study of classroom life.

The integration of existing research concerned with student thought about classroom phenomena has also been furthered by an Educational Review special issue exploring the pupil perspective on schooling (Meighan, 1978) and a forthcoming Elementary School Journal special issue on students in classrooms with a majority of papers addressing student perceptions (Weinstein, 1982). In addition, a conference focusing on teacher and student perceptions of success and failure was held at the Pittsburgh Learning Research and Development Center (October, 1979), the papers of which will soon appear in book form (Levine & Wang, in press).

Finally, Duke (1977) began the important task of reviewing the diversity of studies concerned with student thought about classroom phenomena in a paper entitled "What can students tell educators about classroom dynamics?" He selectively reviewed six categories of student perception research concerned primarily with high school students' perceptions of 1) what they learn, 2) how they learn, 3) their attitudes and concerns, 4) their behavior, 5) the quality of teaching and 6) the school environment.

His primary purpose lay in highlighting the informative nature of the student perspective. Extensive reviews are already available on perhaps the most well researched area of student perceptions, that of student perceptions of classroom learning environments (Fraser, 1980; Fraser & Walberg, 1981; Moos, 1979; Walberg, 1976, 1979).

Thus, in recent years, we have seen much excitement about the student view of classroom life and efforts of a stimulating as well as integrative nature are underway to help support the development of studies in that area. It should be noted that the National Institute of Education has spurred much of this development through its funding of research concerned with student thought about classroom life.

The task of integrating this growing body of studies is not an easy one. In order to identify areas of knowledge and to raise questions for future examination, the research findings must be categorized in some meaningful way. However, an appropriate and useful classification of such a wide range of studies is not easily derived. There are several features of the research that make classification problematic. First, the sheer number of studies which have included some aspect of student perceptions is surprisingly large. From 1966 on, an ERIC search of the literature revealed 515 papers concerned with elementary and secondary student perceptions of classroom phenomena. This number excludes from consideration the myriad of studies which address perceptions of the classroom learning environment or climate.

Second, the quality of the research concerned with student perceptions is quite uneven. Many of these numerous studies have included student perceptual data in a peripheral as well as superficial manner and thus do

not contribute in significant ways to our understanding of the student view of classroom life.

Third, the purposes underlying the use of student perception data in these studies have been tremendously varied. Student perceptions and cognitions about schooling have rarely been studied for descriptive and mapping purposes. Most typically, we have turned to the student to help answer some questions about specific classroom effects that have defied resolution within existing frameworks. Thus, research on the student perspective has grown out of diverse literatures, with different theoretical conceptions, and different purposes in mind. This developmental path has to date produced a somewhat unsystematic and sketchy knowledge base.

Finally, historically, our own conceptualization of the world of the classroom has undergone significant change in its levels of complexity. Earlier, attention was focused primarily on the teacher and student and the processes studied were psychological in nature. In the 1950's, Gage (1951, 1953, 1955) pioneered the application of person perception theory to the study of classroom teaching. While the primary perceiver studied was the teacher, student perceptions of teacher behavior were also assessed. More recently, our view of the classroom has become increasingly differentiated, incorporating multiple types of social stimuli as well as multiple socialization goals. How to categorize the types of social knowledge children must acquire in order to participate within the student role in classrooms is a difficult task indeed. For example, within classrooms, we have examples of friendship and authority relationships and opportunities for the development of self-knowledge as well as knowledge of others. Classrooms also have multiple actors as well as multiple

actors as well as multiple domains of knowledge.

Given the diversity of the literature as well as its relatively sparse nature, a primary purpose of this paper will be to identify domains of knowledge about the student perspective on classroom life. The intent here will be to illustrate promising directions in the research on student perceptions of schooling rather than to provide comprehensive coverage. What we can learn from student perceptions and where we ought to go in future research will also be discussed.

Domains of Knowledge

Social cognition theory in its variety of perspectives (as reviewed by Swarthout, 1980) suggests several distinctions which prove useful in identifying areas of knowledge in student thought about schooling. For example, theorists distinguish between knowledge of the other and self-knowledge and between knowledge of psychological processes and knowledge of social system forces. They also highlight the processes inherent in inferential knowledge about the causation of behavior. One can thus identify domains of knowledge by the key actors and the multiple levels of life in schools. These domains might include student knowledge about 1) the teacher and teacher behavior, 2) peers and peer behavior, 3) other school personnel, 4) the self in school, 5) the causation of behavior in school, 6) the classroom, and 7) the school. The research that addresses each of these domains will briefly be highlighted. The intent here is not to fully review findings but to present a map of the types of issues that have been addressed and to illustrate exciting developments. In many cases, the studies are piecemeal and hence not easily tied together for interpretive purposes.

Student Perceptions of the Teacher

This area of inquiry has been labeled in social psychological research as "person perception". As defined by Shantz (1975), person perception addresses "how an individual describes or categorizes another person or his actions and what disposition or traits he attributes to another" (p. 268).

Most of the studies concerned with student perceptions of the teacher have focused on perceptions of teacher behavior. In early work, the usefulness of students' perceptions of teacher behavior was tentatively argued. One major concern lay in the possible existence of a general evaluative factor which might influence student perceptions (Gage, Leavitt & Stone, 1955; Medley & Klein, 1957). However, in these studies, student perceptions of teacher behavior were found to reflect more than a generalized liking for the teacher.

Concepts of the teacher. Very few studies have examined students' concepts of what the teacher is like or what the teacher is thinking, feeling, or intending. Still fewer studies have attempted to investigate developmental trends in the perception of the teacher. The relevant findings from the developmental literature suggest that around 7 or 8 years of age, children in their descriptions of people shift from more observable, surface clues to more abstract descriptions (such as traits) which are based on observed regularities in behavior (Livesley & Bromley, 1973; Peevers & Secord, 1973). This change is accompanied by a developmental shift from an egocentric view toward an acknowledgement of other perspectives (Langer, 1970; Werner, 1948).

In examining students' concepts of the teacher, student ratings of teacher effectiveness have been factor analysed or students have been

asked to rate the variables used in such studies to yield student perceptions of the characteristics of "good teachers". Fifth graders perceived the effective teacher as a warm, friendly and supportive person who commands clearly, motivates and disciplines pupils effectively, and is flexible in methodology (Beck, 1967). In an elementary school and college sample, variables found to typify the good teacher in all groups were teacher's subject matter knowledge and the ability to teach (Samuels & Griffore, 1980). Despite age differences, views of what constitutes a good teacher were quite similar, except that the young children defined feedback about good performance as a more important quality that was characteristic of a good teacher.

Other studies have examined the positivity or negativity of children's concepts of the teacher (Gregersen & Travers, 1968), how concepts of the teacher become more differentiated given specific behavioral dynamics training (Ojemann & Snider, 1963) and how students' expectations for their teachers might influence teacher behavior (Nash,1976).

Several studies have also addressed student perceptions of teacher attitude. Davidson and Lang (1960) investigated the relationship between children's perception of their teachers' feelings toward them and their perception of themselves, their achievement, and their classroom behavior. Children in fourth - sixth grades completed a checklist of 35 trait descriptions, first in terms of "my teacher thinks I am" and second in terms of "I think I am". The traits were judged as positive or negative and summed to yield an index of perceived favorability. Positive perceptions of the teachers' feelings were related to positive self-images, higher achievement, and more desirable classroom behavior as rated by

teachers. Girls and children from higher social classes perceived their teachers' feelings more positively. There were also significant classroom differences in the favorability of children's perception of the teacher's feelings.

In a study which compared teacher likes and dislikes of student behavior and student perceptions of these attitudes, Seidman and Knapp (1953) found that student perceptions matched teacher perceptions in most areas except for references to student personality. Teachers more than students were likely to mention personality of students as liked or disliked characteristics.

Perceptions of teacher behavior. Studies of student perceptions of teacher behavior have focused on a wide variety of such behaviors. Researchers have also investigated the extent of agreement between student, teacher, and observer perceptions of teacher behavior (Beam & Horvat, 1975; Campbell, 1978; Clark & Creswell, 1979; Cooper & Good, in progress). In addition, agreement between different types of students in their perceptions of teacher behavior has been examined (Cheong, 1966; Goldberg, 1968; Kennelly & Kinley, 1975; Milgram, 1979; Morine-Dershimer & Tenenberg, 1981; Smith, 1964; Thompson, 1969; Weinstein, Marshall, Brattesani & Middlestadt, in press; Wright & Sherman, 1965). In some cases, individual differences influenced perceptions, in other cases not. The paucity of these latter studies as well as the range of teacher behaviors and student characteristics studied make it difficult at this juncture to draw conclusions about differential student perceptions. However, given evidence of differential patterns of teacher interactions with different types of students within a classroom, it is also possible that students are accurately perceiving

teacher behaviors.

The types of teacher behaviors addressed in these studies include the non-verbal behavior of the teacher (Clark & Creswell, 1979); evaluative feedback from the teacher (Boehm & White, 1967; Morine-Dershimer, 1982; Sechrest, 1962; Zahorik, 1970); and teacher instructional behaviors (Anderson, 1981; Cogan, 1958; Koopman & Newtson, 1981; Morine & Vallance, 1975; Stayrook, Corno & Winne, 1978; Whitfield, 1976; Winne & Marx, 1981, 1982). Studies have also examined whether students perceive differences in teacher behavior toward different types of students, for example, differential treatment toward boys and girls (Davis & Slobodian, 1967; McNeil, 1964; Meyer & Thompson, 1956; Slobodian & Campbell, 1967) and toward high and low achievers (Cooper & Good, in preparation; Clements, Gainey & Malitz, 1980; Good, 1981; Gustafsson, 1977; Weinstein & Middlestadt, 1979; Weinstein, 1981; Weinstein, Marshall, Brattesani & Middlestadt, in press). For illustrative purposes, two areas of this research will be examined in greater depth: student perceptions of differential treatment by the teacher and of teacher instructional behavior.

Differential treatment. Early studies of student perceptions of differential treatment were concerned with the treatment by the teacher of boys and girls in classroom settings. Meyer and Thompson (1956) found that three sixth-grade teachers showed more disapproval for the boys than for the girls and that the children recognized this differential in teacher response. McNeil (1965) reported that when boys and girls were taught to read using programmed instruction, the achievement of boys was higher than girls but when boys returned to the classroom, girls had higher achievement. In interviews with the children, boys were named more often by

classmates as receiving negative comments from the teacher and as having fewer opportunities to respond in reading groups. Teachers reported that they believed boys were less ready for reading. In a first grade sample (Davis & Slobodian, 1967; Slobodian & Campbell, 1967), using a similar pupil nomination technique, boys were viewed as receiving more negative comments, few opportunities to read, and as being poorer readers than girls. In this study, these differences were not confirmed in observational data nor were significant differences in achievement documented.

More recently, a series of studies have examined student perceptions of differential treatment by the teacher toward high and low achievers in the classroom. Growing out of the teacher expectancy literature, these studies have been concerned with the extent to which student awareness of treatment patterns might mediate the effects of teacher expectations on student performance. Until recently, research on the self-fulfilling prophecy in the classroom has paid little attention to processes within the student which may mediate between hypothesized differential treatment and student performance. While differential treatment may directly affect student achievement gains without involving student interpretive processes (for example, such as unequal opportunities to learn material), it is also possible that such differential treatment (if perceived) can inform students about expected behavior and in an indirect way can influence their performance expectations and motivation.

Weinstein and Middlestadt (1979) asked younger and older elementary school children to rate 60 teacher behaviors as descriptive of the treatment of a hypothetical male high and low achiever. In comparing the treatment profiles of the two types of students, it was found that students

perceived differential treatment across one quarter of the teacher behaviors studied. Student-perceived teacher treatment of male high achievers reflected high expectations, academic demand and special privileges. Male low achievers were viewed as receiving fewer chances but greater teacher concern and vigilance.

In a subsequent study (Weinstein, Marshall, Brattesani & Middlestadt, in press), a fourth through sixth grade sample of students from eight open and eight traditional classrooms were asked to rate the frequency with which 44 teacher behaviors were accorded one of four types of students (both male and female high and low achievers). A classroom structure comparison was included in order to investigate the hypothesis that perceptions of differential treatment would be less likely in open classrooms where teacher feedback to students would be more individualized and more private. In this study, the teacher behavior inventory was factor analysed to yield four types of teaching behaviors that were perceived by the students. Students described low achievers as the recipients of more negative feedback and teacher direction, and more work and rule orientation than high achievers. High achievers were perceived as receiving higher expectations, more opportunity and choice than low achievers. No differences were documented in the perceived degree of supportive help. Further, these treatment differences between high and lows were perceived both for male and female target students, and subjects regardless of sex or achievement level perceived these treatment differences similarly.

The hypothesis that students in open classrooms would perceive less differential treatment of high and low achievers than students in traditional classrooms was not supported. However, although unrelated to the

open or traditional orientation of teachers, classrooms were found to differ in the extent of differential treatment perceived by students. Further, teachers were perceived to differ more in their treatment of low achievers than in their treatment of high achievers.

It was also found that the extent to which the teacher was perceived by students to differentiate the treatment of highs and lows was related to the degree of congruence between student and teacher expectations (Brattesani, Weinstein, Middlestadt & Marshall, 1981). In classrooms with high perceived differential treatment, students' expectations more closely matched their teachers', and teacher expectations were a more powerful predictor of student expectations and performance.

Open-ended interviews with a subset of these students suggested that children from both types of classrooms used similar cues to learn about their relative smartness (Weinstein, 1981). They focused on teacher practices (largely feedback), and reported evaluations based on absolute standards and devoid of teacher attributions for causality. The sole difference between high and low differential treatment classes concerned the greater percentage of public cues for poor performance reported in high differential treatment classrooms.

Interviews with students also highlighted the fact that students read into teacher behavior much beyond what researchers commonly think they are measuring (Weinstein & Middlestadt, 1979). For example, their responses revealed at least four varieties of the teacher behavior "call on". The teacher "calls on the smart kids for the right answer. . . . She expects you to know more and won't tell answers" whereas with regard to the low achievers, the teachers calls on them sometimes "to give them a

chance" or "because they goof off". Or often she "doesn't call on them because she knows they don't know the answer".

In a study by Cooper and Good (in preparation), students described their own treatment in contrast to the Weinstein and Middlestadt (1979) study where students described the treatment of hypothetical high and low achievers. In the spring of the school year, fourth through sixth grade students (highs, middles and lows from each class) rated nine teacher-student interactions for whether these occurred more often, about the same amount, or less often than classmates. Teachers completed a parallel questionnaire for each of the twelve target students in their classroom and classroom observations of the frequencies of these same interactions with each of the target students were also available.

Students who were the recipients of higher expectations from the teacher, saw themselves as engaging in more frequent teacher-initiated public interactions, less frequent teacher-initiated private interactions, more appropriate (correct) responding, and less frequent criticism from the teacher. Teachers were aware of these differences as well, except that in the case of praise, high expectation students tended to perceive more frequent praise from the teacher whereas teachers perceived low expectation students as the more frequent recipient. Perception differences between boys and girls were not strong. In two cases, boys thought they received less praise and more behavioral interventions than girls. In any event, expectation effects were perceived by students, that is, students who were the recipients of high and low expectations from the teacher perceived correspondingly more or less frequent teacher treatment relative to other students in the class.

Cooper and Good (in preparation) also examined the "accuracy" of student perceptions of interactions as compared to observed frequencies of interactions. Student estimates of teacher treatment matched the observational records on only one of the nine behaviors compared--however, all the means were in the accurate direction. There was a greater correspondence between student and teacher perceptions of interaction. Two possible sources of difficulty were noted by Cooper and Good. First, teachers took part in all the interactions whereas students had to estimate the frequency of their peers' interactions as well as their own. Second, students may over- or under-report certain interaction patterns with teachers in order to protect their teachers. Gustafsson (1977) found that students were most likely to say that they got the same number of questions or same amount of help from the teachers as did other students. Pupils made comments such as "Miss X does as good as she can. She comes to all of us." Similarly, in a study of second graders (Clements, Gafney & Malitz, 1980), 43% of the children interviewed said that the teacher did not treat good readers differently from poor readers, and low group members were more likely to say there was no difference in the treatment.

Despite a tendency of students to under-report differential teacher treatment, particularly when asked about it directly, there exists evidence to suggest that students are aware of differences in teacher treatment within the classroom and further, that different relationships hold between teacher expectations, student expectations and student achievement in classrooms where greater differential treatment is perceived. In ongoing research (Weinstein & colleagues) we are following perceived high and low differential treatment classes at three grade levels (1st, 3rd & 5th) in

order to study the effects of such perceptions on student expectations, motivation and achievement, and to identify, from an observer perspective, classroom structural and process differences.

Instructional behavior. Until recently, much of the research on instructional behavior has focused narrowly on the relationship between teaching behaviors and measures of student learning. With this focus, little has been learned about the nature of the immediate responses made by students to teaching events. Winne and Marx (1980) argue that our assumptions about learner responses may not match the actualities of learner cognitive processes. They suggest that before assuming, for example, that application questions asked by the teacher are ineffective in facilitating learning gains, it would be important to verify if students ever engaged in the psychological processes intended by such questions.

In demonstrating the mediational role of student cognitive processes, Winne and Marx (1980) suggest four types of necessary evidence: first, that students perceive the occurrence of specific teacher behaviors; second, that student perceptions of the occurrence of teacher behaviors influences subsequent learning; third, that students understand the intent of a teaching event, that is to engage in a particular cognitive process; and fourth, that the utilization of particular cognitive processes influences learning.

One can examine their study and others for such evidence. In an experimental study of the effectiveness of teacher structuring, soliciting, and reacting behaviors, sixth-grade students were given a Treatment Perception Scale to tap their perceptions of the occurrence of these teacher behaviors. Student perceptions of these behaviors were associated with the actual occurrence of these behaviors and were influenced by student

aptitudes as well (Clark, Gage, Marx, Peterson, Stayrook & Winne, 1979; Winne, 1977). Stayrook, Corno and Winne (1978) also found that beyond the effects that student aptitude and teacher usage of the specific behaviors had on achievement, student perceptions of teacher structuring and reacting (but not soliciting) had a direct causal link to student achievement. These results suggest that student perceptions of the occurrence of specific teacher behaviors can be related to subsequent learning, Further, the mediating effect may be behavior-specific.

Regarding children's perceptions of the intent of a teaching event, Anderson (1981) reports on the basis of preliminary data analysis, that most first grade students believe the most important aspect of doing their seatwork is to get it done. Both behavioral and student interview data suggest that in doing seatwork, first graders "perceive purpose in terms of doing the work and progressing through a book rather than indicating an understanding of the specific content-related purposes of assignments" (p. 10). On the basis of observational data, teacher statements appear basically procedural and appear devoid of information about the content purposes of assignment. Hence, student perceptions may accurately depict the interest of teachers or they may also reflect the inability of first graders to perceive abstract levels of teacher intent.

In another study, older elementary school children were asked about the cognitive responses they made to specific teaching behaviors (behaviors which had been identified as important by their teacher) and their views of learning were compared to those of teachers. Winne and Marx (1982) conclude on the basis of the interview data that mismatches between teacher intent and student perception of intent somtimes occurred.

In particular, teachers' attempts to promote affective states in students (for example, toward enjoyment) were not perceived by the students. Students tended to focus on the content of the task presented to them. Secondly, when more information was presented to the students, the more variable were student perceptions of the instructional stimuli. Third, when students did a well-practiced cognitive response to a stimulus, they quickly perceived teacher intent. Fourth, students' ability to perceive the teacher's intent sometimes depended on how well they knew the material they were presented.

Several other studies bear on the effect of utilization of particular cognitive strategies on learning. Koopman and Newtson (1981) performed an experiment in which they taught college students who were watching a videotaped lesson to focus on either the smallest steps, any size steps or on the largest steps of the lesson. These unitization instructions were found to affect subjects' level of perceptual analysis. Further, the level of perceptual analysis was associated with learning under certain conditions. Winne and Marx (1980) found that instructing college students to make specific cognitive responses to particular lecturer behaviors interfered with subsequent learning rather than facilitating it. In a later study with upper elementary students, Winne (1980) found training in cognitive responses to instructional stimuli enhanced the achievement of low ability students.

In an experimental study of fifth and sixth grade students' thinking processes during direct instruction, Peterson and Swing (1982) used a stimulated recall technique in which students were shown videotaped segments of their lesson and were asked to describe what they were thinking.

Students who indicated in the interview that they were attending were more likely to have higher performance on the seatwork problems. Student perceptions of attention were found to be better predictors of achievement than observer reports of student attending. Independent of their ability, student reports of their understanding of the lesson were positively related to their achievement. Further, independent of ability, student reported use of the strategies "relating the information being taught to prior knowledge" and "trying to understand the teacher or problem" were related to student achievement.

These studies suggest that student perceptions and cognitions during instruction can play a mediating role in the effect of instruction on student achievement. The conditions under which this happens, both in terms of situational dimensions as well as with respect to developmental considerations, merit further study. It would be important to begin developmental studies in this area. Children's capacities to perceive teacher's intent should also be investigated.

Student Perceptions of Peers

Historically, educational psychology has narrowly focused on the teacher and student relationship, ignoring the important influence of student-student interaction on achievement, socialization, and development (Johnson, 1981). Therefore, it is not surprising that relatively fewer studies have been conducted concerning student perceptions and thoughts about peers and peer behavior. Children's preferences for other children (sociometric choice) have been extensively studied in the classroom but children's underlying thinking about peers remains relatively unexplored.

Investigators have reported developmental differences in children's descriptions of peers whom they like (Livesley & Bromley, 1973; Scarlett, Press & Crockett, 1971; Youniss & Volpe, 1978). Children of six and seven years old describe peers in terms of their physical characteristics and their activities, whereas adolescents refer to psychological attributes and more abstract forms of interaction such as the sharing of feeling. Further, younger children describe friendship relations according to shared rules of conduct. Around age nine and ten, children apply similar rules but they can qualify rule usage on the basis of perceived characteristics of the other (the peer).

Two areas of concern where systematic research is underway include student perceptions of the ability of their peers and student perceptions of peer behavior.

Peer ability. Nash (1971, 1972) has shown that there is a high degree of consensus among teachers and students about the relative abilities of the members of a class. A study by Stipek (1981) suggests that children may be able to accurately assess the performance of their classmates before they can assess their own performance. She found that from kindergarten through third grade, children's ratings of their classmates' ability matched those of the teacher, whereas self-ratings were not correlated with teacher ratings until second and third grade. The degree of consensus about peers' ability appears also to be related to the task structure of the classroom. Rosenholtz and Wilson (1979) found significantly higher consensus among peers, self, and teachers regarding students' abilities in classrooms where the task structure produced comparable performance cues. In a related study, Filby and Barnett (1982) found significantly more

agreement about which student is the better reader in classes with whole-class reading instruction compared to classes with staggered reading groups. Further, as a function of different organizations for reading, students relied on different cues for making their judgements. Thus, at an early age, children appear able to assess the academic ability of peers, and classroom factors seem to facilitate or diminish this capacity to make accurate assessments.

Peer behavior. Interest has also been directed toward an examination of children's perceptions of student behavior. Studies have focused on general student behavior (Rubenstein, Fisher & Iker, 1975) and on disordered behavior (Coie & Pennington, 1976; Mangan & Shafer, 1962; Maas, Maracek & Travers, 1978; Marsden & Kalter, 1976; Rohrkemper, 1981). Research has also addressed student labeling practices for each other (deVoss, 1979) and students' ideas about helpful behavior between peers (Ladd & Oden, 1979). Rohrkemper's (1981) investigation of student understanding of three types of inappropriate student behavior (underachievement, hyperactivity, and low achievement) was conducted at two grade levels as well as in two types of socialization-style classrooms. In general, Rohrkemper found both grade level and classroom differences in student perceptions and reactions to the hypothetical students as well as in student understanding of teacher treatment toward these types of students. Students in inductive classrooms compared to behavior modification classrooms were more likely to attend to the intentional aspects of peer behavior, to report positive attitudes toward the hypothetical classmates, and to perceive teachers' goals with students as evolving from concern rather than management issues. Younger students in the behavior

modification classrooms were the least insightful in their interpretations of peer behavior, least involved affectively and behaviorally in their peers' behavior and most global in their understanding of teacher goals. Thus the effects of socialization appears to be strongest in the younger children. Students in behavior modification classes were more action-oriented relative to the more analytic style of students in inductive classrooms. Student individual differences were not found to largely affect perceptions of hypothetical peers.

Student Perceptions of Other School Personnel

Very few studies were found which examined student perceptions of other school personnel. Bachman (1975) investigated elementary school children's perceptions of sources of help for their problems. The majority of students preferred to take their problems to parents or sibs--only 20% of first and second graders and only 4% of third through fifth graders preferred school personnel. Scattered studies have also been conducted on students' perceptions of the principal (Freehill & Ross, 1960), of psychologists (Dolinger & Thelen, 1978) and of school psychologists (Adams & Docherty, 1981).

Student Perceptions of the Causes of Behavior

Perhaps the best developed theoretical model for investigating student perceptions is the attribution framework. Attribution theory examines the perceived causes of behavior--one's own behavior or another's behavior. Achievement behavior has been the most frequently studied process but the theory has been applied to other areas relevant to classrooms as well (for example, help-giving, Weiner, 1980; or hyperactive behavior, Rohrkemper,, 1981). As hypothesized by Weiner and colleagues (1971, 1979),

motivated behavior and future task performance are affected by individuals' cognitions about the causes for successful and unsuccessful performance rather than by the reality of the success or failure itself. Thus, the interpretations of individuals become of prime importance as a determinant of motivation.

The model assumes that "in a school setting, the search for understanding often leads to the attributional question of 'why did I succeed or fail?' or more specifically 'why did I flunk math?' or 'why did Mary get a better mark on this exam than me?'" (Weiner, 1979, p. 3). Weiner identifies four possible causes used to interpret and predict the outcome of an achievement-related event: ability, effort, task difficulty and luck. These causes have also been categorized along dimensions of locus, stability and controllability. The locus dimension differentiates between causes which originate within the individual (ability and effort) and those which are external to the individual (task difficulty and luck). The stability dimension defines causes as stable (ability) versus unstable (typical effort and luck). Finally, the controllability dimension differentiates between causes under volitional control (effort) from uncontrollable causes (ability).

Attribution theory postulates that both the characteristics of the attribution as well as the performance outcome impact on affective reactions, expectations, and future achievement behavior. For example, if a child attributes success in reading to ability (which is stable and internal) then he or she should expect to succeed in the future, attempt similar tasks, as well as persist at difficult tasks. In a failure situation, the same ability attribution would lead to avoidance of task and

avoidance of effort. Not trying provides the opportunity to protect self-image from another lack of ability attribution (Covington & Omelich, 1979). Attributions to effort or lack of effort, on the other hand, suggest that the outcome is under personal control and hence, negative outcomes can elicit additional effort expenditures. The difficulty of the task and the performance of others are also assumed to affect the attributions that individuals make about success and failure. There are also important individual differences in attribution patterns: for example, girls tend to differ from boys in being less likely to attribute success to high ability, and more likely to attribute failure to lack of ability.

The evidence for the achievement attribution model is largely based on laboratory studies of a college-age population and hence the model is not directly applicable to the complexity of classroom life (Blumenfeld, Pintrich, Meece & Wessels, 1982; Frieze, 1980). In the laboratory studies, success and failure were manipulated as well as defined for subjects; context and history were ignored. In the classroom, developmental as well as context differences play an important role in mediating achievement attributions.

Ruble and Rholes (in press) in a review of the development of children's attributions about their social world, suggest that internal stable causes are not part of younger children's perceptions of themselves or others. Hence, younger children are less likely to be influenced by failure given the unlikelihood of attributions to lack of ability. Younger children have also been found to be more optimistic about their ability. The fact that these concepts are developing suggests that developmental attribution studies are qualitatively different from studies with adults

(Blumenfeld et al., 1982; Nicholls, 1978).

Applications of attribution theory to classrooms will also have to consider how success and failure judgements are made by children, rather than assume that an objective grade means success for everyone (Frieze, Francis & Harrusa, in press). It is important to ask how student definitions of success vary as a function of classroom factors. Recent work suggests that children's definitions of success vary across individuals, tasks and situations (Frieze, Francis & Harrusa, in press). Also, in a study of the attributional patterns of first, third and fifth graders for success or failure in four situations, the achievement situation elicited different causal mechanisms (Frieze & Snyder, 1980). Effort was seen as most important for school testing situations. Ability was viewed as critical for finishing an art project successfully or winning in football.

Student Perceptions of the Self in the Classroom

There exists a large body of research concerned with children's self-concept. As defined by Shavelson, Hubner and Stanton (1976), self-concept is a person's perception of himself, and the perception is a multifaceted one. Most theorists have distinguished between global self-esteem and dimensions of self-evaluation. For example, in the Perceived Competence Scale for Children (Harter, in press) three specific competence domains were identified (cognitive, physical and social), in addition to a general self-worth evaluation. On the basis of a multi-trait, multi-method analysis of three self-concept inventories, Winne, Marx and Taylor (1977) argue that there is little evidence for the discriminant validity of the physical, social and academic aspects of the self-concept. Harter (1982) suggests that when meaningful items are selected to tap the various domains, older

children will make distinctions among areas of competence. Minton (1979) has demonstrated that children utilize different sources of information in making judgements in these domains. Children's judgements of cognitive competence were based on the speed of performance, effort and evaluations from authority (teacher and parent) whereas judgements of social competence were based on feedback from peers, and personal attributes. Further, developmental studies suggest that younger children are not likely to make distinctions between cognitive and physical skills (Harter, 1982).

There are a variety of instruments available which measure academic self-concept, and a multitude of studies have examined the correlates and predictors of self-esteem. The theory, the available instruments and research findings have been well reviewed and will not be considered here (See Marx & Winne, 1978; Shavelson, Hubner & Stanton, 1976; Shavelson & Bolus, in press; Wylie, 1979).

Development of the self. There is increasing interest in the development of children's notion of the self. Broughton (1978) characterizes children's thinking as evolving through three phases: a predualistic childhood period, followed by a dualistic phase in which the physical and mental self is distinguished, and ending in a reconciliation of the physical and mental self. The developmental data on children's changing self-descriptions suggest that younger children focus on concrete observable aspects of the self such as physical characteristics or behavior, whereas older children are more apt to utilize traits and abstract psychological processes in their self-descriptions. Harter (1982) argues that self-descriptions begin with specific attributes and become increasingly integrated into traits, single abstractions, and higher-order abstractions. Further, she suggests

that during each of these stages, children first apply the attributes, traits or abstractions globally and then in a more differentiated as well as situation-specific manner. Thus, she proposes that young children have the capacity to feel smart in one situation and not in another but the area of smartness would be conceptualized in attribute rather than trait terms, that is, as observable and behavioral entities.

Sense of control. There has also been an increasing emphasis on constructs such as locus of control (Rotter, 1975), learned helplessness (Seligman, 1975), self-efficacy (Bandura, 1981), self-determination (Deci, 1975; deCharms, 1968), and self-responsibility for school learning (Wang, in press; Wang & Stiles, 1976). A personal sense of cause or control is viewed as a critical aspect of the self. These constructs differ in the foci of perceived control whether over outcomes or behavior (Harter, 1982). Wang (in press) reviews the studies on perceived locus of control which suggest a close relationship between students' sense of personal control and their learning processes and outcomes. In her own research, Wang (in press) designed an intervention program to foster the development of students' personal control over learning and found that increased self-management responsibilities were reflected in students' increased sense of control, and improved task performance. The effect of teacher expectations on student learning was minimal when the students were working under the self-management system, suggesting that students' personal control may mitigate the impact of expectations.

Self-perceptions of ability. The school is a primary setting for the development of notions of ability. This setting provides information about one's own academic competence in relation to one's peers. How children

understand ability and how they come to understand their own ability is important from both an attributional framework as well as from self theory. Blumenfeld, Pintrich, Meece and Wessels (1982), in a review of children's self-perceptions of ability, argue that developmental regularities and classroom context factors place limits on children's ability to develop realistic perceptions of ability relative to others.

The developmental literature suggests that young children see ability or intelligence as a changeable entity which can be improved with effort (Dweck & Elliott, 1981; Yussen & Kane, 1980). Only with increasing age, are children able to embrace a stable internal trait theory of intelligence. Younger children do not distinguish between ability, effort and outcome and believe that those who try harder are smarter (Nicholls, 1978). Nicholls (1978) suggests four levels of reasoning about ability and effort which culminate in children's belief that ability may limit or increase the effectiveness of effort. Younger children are also less able to integrate information about previous outcomes in making predictions for future performance (Parsons & Ruble, 1977). In the assessment of performance, younger children rely on absolute and individual standards rather than normative standards, that is, children's achievement-related evaluations are not affected by social comparisons. Blumenfeld and colleagues (1982) argue that these developmental patterns bias young children's self-perceptions in a positive direction.

Blumenfeld and colleagues (1982) also propose that the characteristics of classwork and evaluation (which in their observational research was found to be unclear, inconsistent, noncontingent and primarily positive)

promote more positive ability perceptions. Yet there exists compelling evidence that teacher feedback patterns and classroom conditions which maximize the differences between high and low achievers affect student perceptions of ability, particularly after fourth grade. With age, student perceptions of their ability become more congruent with teacher perceptions of their ability (Nichols, 1978; Stipek, 1981). In a study of junior high school classrooms (Parsons, Kaczala & Meece, in press), the discriminative use of criticism for academic work had a positive impact on student self-perceptions of ability. Blumenfeld and colleagues (1981) also found relationships between feedback patterns and self-perceptions of ability. Further, in classrooms with competitive versus cooperative reward structures (Ames, 1981), in classrooms with narrow task structures and an emphasis on public and comparable performance evaluation (Rosenholtz and Wilson, 1980) and in classrooms where students perceived greater differential treatment toward high and low achievers (Brattesani et al., 1981) self-perceptions of performance differences were accentuated.

Student Perceptions of the Classroom

Classroom climate studies. The bulk of the studies concerned with student perceptions of the classroom focuses on the perceived psychosocial climate or learning environment of the classroom. This area of research has been well established since the late 1960's and represents the most well-developed use of student perceptions as a methodology. Fraser and Walberg (1981) suggest that student perceptions of the characteristics of the classroom are preferable over naturalistic study or classroom observational methods for their 1) economy, relative to the expense of training coders and of analysis, 2) comprehensiveness, representing student

experiences over many lessons rather than over an isolated few, 3) robustness, reflecting pooled judgements across all students rather than the judgement of a single observer, 4) importance, reflecting the power of perceived occurrences over actual occurrences and 5) predictive superiority, relative to interaction variables in accounting for student learning outcomes.

The literature on student perceptions of classroom learning environments has been extensively reviewed (see Fraser & Walberg, 1981; Moos, 1979; Walberg, 1976, Walberg & G. Haertel, 1980). The most widely used instruments for assessing students perceptions of their classroom climate include the Learning Environment Inventory (LEI) and the related My Class Inventory (MCI) for use at the elementary school level (Anderson and Walberg, 1976), and the Classroom Environment Scale (CES) (Moos and Trickett, 1974). Recently, Rentoul and Fraser (1979) developed the Individualized Classroom Environment Questionnaire (ICEQ) to measure those dimensions which distinguish between open and traditional classrooms.

Moos (1974) has characterized all human environments as having relationship dimensions (in classrooms, characterized by the degree of involvement, affiliation and teacher support), personal development dimensions (task orientation and competition) and system maintenance and change dimensions (order and organization, rule clarity, teacher control and innovation). This conceptualization has been supported by a factor analysis of Classroom Environment Scale data. All these instruments can be given to both teachers as well as students and can also be used to measure ideal or preferred environment as well as actual environment.

In a meta-analysis of predictive validity studies using perceived

climate measures, Haertel, Walberg and Haertel (1979) found with remarkable consistency of effects, that classroom environment perceptions accounted for variance in learning outcomes beyond the variance accounted for by ability. Learning gains were positively associated with student-perceived cohesiveness, satisfaction, task difficulty, formality, goal direction, democracy and the material environment and negatively associated with friction, cliqueness, apathy and disorganization. Classroom environment dimensions have also been used to study curriculum distinctiveness and to provide evidence of curriculum change (Fraser & Walberg, 1981). Fraser & Walberg (1981) also suggest that assessments of student perceptions of real as well as preferred environments can facilitate environmental improvement as well as person-environment matching.

It should also be noted that the classroom climate studies have typically relied on the classroom mean of student observations as a measure of perceived climate. This method masks the possibility that different environments exist for high and low achievers within one classroom setting and that these differences are perceived by the students. In a recent study by Weinstein and colleagues (in press), student perceptions of teacher behavior were obtained toward targeted students (high and low achievers) in order to examine the extent of agreement among students about the "climate" for highs and lows. Student individual differences in sex and achievement were not found to influence student perceptions of differential teacher treatment toward high and low achievers. Hence the "shared" nature of perceptions of differential treatment toward high and low achievers within classrooms raises questions about how we measure and what we conclude from the perceived climate of a social setting. The existence

of perceived subenvironments within the classroom suggests that we must not wash out systematic differences in perceived experience between subgroups of children in the classroom, and that within-classroom climates are as important to assess as between-classroom climates.

Classroom processes. Beyond classroom climate studies, investigators are becoming interested in children's understanding of a wide variety of classroom processes. These include student perceptions of decision-making in the classroom (Wolfson & Nash, 1965, 1968), student perceptions of resource allocation in the classroom, that is, their understanding of distributive justice (Mergendollar, 1981), children's perceptions of the different resources within team teaching situations (Takanishi & Spitzer, 1980; Whittington & Lawler, 1971), student perceptions of work (Woods, 1978) and of work and play in the classroom (Block, 1981), children's understanding of school time (Hassenpflug, 1981) and children's perceptions of the prerogatives and constraints they have in school (Lee, 1979).

In a large scale developmental investigation of student socialization in open compared with traditional classrooms, Blumenfeld and colleagues (in press) explored children's thoughts about the student role. First graders were found to be more confirming to norms than fifth graders in terms of their thoughts about the importance of the norms and their feelings about conformity and nonconformity. Further, teachers who on the basis of behavioral observation focused more on the task requirements of the classroom and the necessity for effort had students more strongly convinced of the importance of effort and/or task behavior.

Within a sociolinguistic tradition, children's perceptions and interpretations of classroom language were investigated and related to student

participation in classroom discourse and to their success in school (Morine-Dershimer & Tenenberg, 1981). Among the findings, there were strong classroom differences in student perceptions of the function of teacher questions and of teacher praise in lessons. These differences concurred with observed differences in teacher use of such behaviors. Of interest, student reports of what they heard in lessons focused largely on other student responses rather than on teacher questions or comments.

Student Perceptions of School

Student perceptions of the specific processes and practices of the school have also been assessed. Brookover and his associates (1979) measured student perceptions of the academic climate of elementary schools and found that students' sense of academic futility contributed more than any other climate variable to the variance in achievement. Student perceptions of the school climate have also been studied using the Elementary School Environment Survey developed by Sinclair (1967, 1970). As factor analysed by Sadker, Sadker and Cooper (1973), schools were characterized according to their degree of alienation, humanism, autonomy, morale, opportunism and resources. Using Sinclair's five environmental dimensions of practicality, community, awareness, propriety and scholarship, big schools and small schools were compared regarding student perceptions of school climate. The size of the school made no difference in pupil perceptions of practicality, propriety or scholarship, but students from smaller schools felt the school was more intimate and more friendly (Moracco, 1978).

McDill and Rigsby (1973) measured student perceptions of dimensions of the high school academic climate, identifying the extent to which the school stressed intellectual and competitive values as a powerful factor

in achievement. Epstein and McPartland (1979) studied authority structures in open and traditional elementary, middle and high schools using student perceptions of school practices. Trickett (1978) contrasted the normative classroom environment of five types of schools. Alternative and vocational schools were perceived as the most different, with alternative schools stressing the interpersonal aspects of the classroom experience and vocational schools highlighting rules and regulations.

Learning From Student Perceptions of Schooling

Although knowledge about student perceptions of schooling is clearly in its infancy, there is much to be learned from the research that has been done to date. First, what is learned from this body of research is a new attitude about student life in the classroom, that is, that students actively struggle to make sense of the social reality of schooling. Knowledge of the rich social-cognitive life of students increases our sensitivity to the multiple challenges that classroom living poses for students. We can come to know the world of school through the eyes of students.

Second, the evidence that students may not perceive what teachers intend has enormous implications for evaluating and improving teacher effectiveness. The interventions of teachers can sometimes backfire because students interpret them differently than teachers intended. There is much to be learned from student interpretations of classroom stimuli.

Third, student perceptions can inform researchers and teachers about the qualities of environments and about changes in environment that come about as a result of planned intervention programs.

Fourth, student perceptions can be examined as outcomes in and of

themselves--social-cognitive outcomes which reflect the effects of different educational environments.

Finally, student perceptions can play a mediating role in the outcomes of the teaching process. Student awareness of teacher behavior or teacher intent may mediate the impact of that behavior on student achievement outcomes.

Suggested Directions for Future Research

This review of the types of research studies that have examined student perceptions of schooling suggests several important directions for future research. Attention might profitably be focused on 1) a systematic mapping of the terrain, 2) a charting of developmental milestones in student understanding, 3) a specification of the classroom or situational context of student perceptions, 4) an examination of methodology and 5) an examination of congruence of perspectives.

Systematic Mapping of the Terrain

Only recently in our studies about student perceptions of classroom phenomena have we been knowledge-building, that is, working toward common questions of concern. Perhaps the best developed example of this type of integrated work has been the research on student perceptions of classroom climates. Solid instruments have been developed to tap student perceptions and these instruments have been systematically applied to a wide range of questions. Thus, student perceptions of classroom environments have been found to differentiate between classrooms, to demonstrate changes in classrooms which result from planned interventions and finally to predict academic achievement.

In several other areas, we are beginning to generate a more systematic understanding of the student perspective concerning specific phenomena central to the educational enterprise. In a variety of research problem areas, student perceptual data were included precisely because previous theoretical paradigms had failed to answer important questions about classroom phenomena. The problem focus is more apt to carry with it a concern for interrelationships between the actors of the classroom, given its primary interest in classroom effects. Often, several types of student perceptual data are examined concurrently, and the student knowledge of the classroom is framed around specific dynamics rather than the more static domains of focus presented earlier. Examples of such integrative research areas include research concerned with student-mediated effects of the self-fulfilling prophecy, teacher-effectiveness research which explores student perceptions and cognitions during instruction, and research on socialization and social-cognitive outcomes in varying classroom contexts.

In still other areas, we are moving toward a more systematic application of the variety of social-cognitive theoretical models to classroom life. Swarthout (1980) analysed four such traditions (structural-developmental, information-processing, attribution and ethnomethodology) in terms of their applicability to issues of classroom life. Other approaches such as sociolinguistics, social learning theory and symbolic interactionism were identified as relevant to studies of social cognitive processing in the classroom. Each theoretical framework provides concepts as well as methodology that prove useful for delineating students' understanding of schooling. Applications have been more frequent utilizing attribution theory or structural-developmental theory. The concepts of

information-processing have been usefully applied to the study of teacher decision-making but as of yet have not been utilized with students. Mapping the terrain of knowledge also means examining our understanding of the student perspective both within theoretical approaches as well as across paradigms.

Finally, we need to move beyond our limited focus on processes between teachers and students. We know relatively little about student perspectives of peer life in classrooms, or about students' knowledge of the social system of the classroom and its rule and role demands or about student views of the school. We need to develop a cognitive map of the salient issues of classroom life and of schooling that confront students and engage their thinking. This map of schooling can also be furthered by incorporating perspectives from ecological models for viewing classroom functions and processes (Doyle, 1981) and from sociolinguistic models of the communicative requirements of classroom life (Green, 1981).

Charting Developmental Milestones in Student Understanding

Developmental social cognitive theory has much to tell us about the capabilities and limits of students' cognitive capacities for understanding. Recent developments have extended Piaget's theory of cognitive development to include the construction of social as well as physical reality. In this theoretical approach, the underlying structure of cognition is emphasized rather than content, yielding conceptualizations of an invariant sequence of social-cognitive stages through which all children pass.

In recent years, research has flourished in a variety of areas. Beginning with investigations of the child's moral judgement (Kohlberg,

1976), the child's ability to take the perspective of another through role taking (Flavell, 1977; Selman, 1976), and the child's conception of others (Livesley & Bromley, 1973; Shantz, 1975), researchers have moved toward an examination of the child's conception of the self (Broughton, 1978), of interpersonal relations such as friendship or authority (Damon, 1977), of social conventions (Turiel, 1978), and of social institutions (Furth, 1978, 1980).

Knowledge about developmental regularities in the social understanding of children alert us to potential limits of classroom effects, to potential sources of miscommunication between teachers and students, and to the types of socio-cognitive outcomes we might expect from students. While educational researchers are primarily concerned about the content of thought rather than its structure, the content of thinking is limited by structural capabilities. Developmental theory has also categorized domains of social understanding which may have relevance to thinking about classroom domains.

The usefulness of developmental findings for integrating our knowledge about student perceptions of ability (Blumenfeld et al., 1982) and about student attributions for social events (Ruble & Rholes, in press) has been well demonstrated. Further, developmental studies of student perceptions of classroom phenomena are essential to improving our understanding of the student perspective on classroom life (Blumenthal & colleagues, in progress; Rohrkemper, 1981; Weinstein & colleagues, in progress).

Specifying Classroom or Situational Context

Classroom context differences have been found to be related to

differences in student perceptions and understanding of classroom life (e.g., Brattesani, Weinstein, Marshall & Middlestadt, 1981; Morine-Dershimer, 1982; Rosenholtz & Wilson, 1979). Context has also been discovered in a variety of research traditions concerned with the study of teaching (Doyle, 1981; Green, 1981; Koehler, 1981). Koehler (1981) contrasts the control function of context in process-product studies of teaching with the relational function of context in sociolinguistic studies of classroom. We need to understand the ways and the whys of patterns of relationships between student thoughts about classroom phenomena and the social context of their thinking. Developmental theorists have largely ignored context in their quest for universal patterns of social cognition. How classroom context might influence both the content and possibly the structure of children's thinking needs to be more thoroughly investigated. Classrooms, because of differences in their structure and process, may produce different socio-cognitive outcomes in students.

An Examination of Methodology

The student perspective has been studied from a variety of theoretical frameworks as well as methodology. Studies have varied in the attention given to the structure of thinking (how children understand) as opposed to the content of thinking (what children understand). When judgements have been obtained from students, the judgements have varied in the type of discrimination called for; for example, whether indicative of an event or indicative of its frequency, whether relative to peers or absolute incidence, and whether self-referent or other-referent in focus. Studies have also differed in how close to reality the perceptual stimuli are--whether exploring student perceptions of actual events

through stimulated recall methods or investigating perceptions of hypothetical situations. In some studies, student responses have been forced into preconceived categories or distinctions; other studies have used open-ended interviews.

These methodological differences between studies make interpretation of findings problematic. Good (1981) argues that we have not paid enough attention to our interview methods both with regard to the types of questions we ask and the context in which we interview (in a group vs. individually, single vs. multiple interviewers). Have we a knowledge base about the limits of student understanding or do these limits perhaps reflect our particular methods? We need to more critically examine our methods of ascertaining student perceptions and thought, and improve the depth of our investigation so that we can adequately describe how students understand the classroom reality.

Examining Congruence of Perspectives

We have come from a tradition that holds the observer perspective on classroom process as the sacred criterion for accuracy or truth. We need to move away from the notion that truth exists or that accuracy is a meaningful concept. The observer is limited in access to life in classrooms in a variety of ways. Observation is by nature selective. The limited subset of behaviors which are observed are dictated by the researchers' conceptualization and may not capture the actual frameworks that underlie the behavior of teachers and students. Further, the observer's access is also limited in time and scope. Instances of behavior may be differentially weighted by participants and observers.

Single instances may be more critical than highly frequent events. The chosen target of treatment behavior and the timing of interaction in light of the history of interaction patterns in that classroom may be critical informational cues that only teachers and students have available. It is also possible that observers could see things that teachers and students cannot. Other research traditions (for example, the information-processing paradigm) suggest that participants in routine social situations regulate their social behavior in the form of "scripts" constructed on the basis of prior experience and hence do not engage in much conscious processing of social information (Langer, 1978; Nisbett & Wilson, 1977).

On the other hand, teachers and students differ from each other in their perspectives on the classroom. The capacity of students to process social information from classroom interaction and to apply it to themselves, for example, in the form of a stable internalized self-concept of ability, is an unfolding one and a capacity that differs from the capabilities of the teacher. Further, teachers experience interactions with all students, whereas students experience their own interactions and vicariously observe others' interactions with the teacher (Cooper & Good, in preparation). In addition, the classroom is the teachers' native culture and students in an anthropological sense must master a foreign culture (Florio in Green, 1981; Mehan, 1979). Also, as some researchers have suggested (Cooper & Good, in preparation; Gustafsson, 1977), students may report their perspective on classroom life in ways that protect their teachers.

Given these differing ways of observing the classroom reality, it is difficult to maintain a view that one is more accurate than another.

Rather, we must learn from each perspective, identify matches and mismatches between perspectives and examine relationships between perceptions and behavior. To the extent that perceptions (although imperfect) simplify complex social environments for individuals (Taguiri, 1969), we must respect and work from these simplified understandings. By investigating several perspectives in each study, we will improve our understanding of the social reality of classrooms.

In sum, knowledge-building about the student perspective on classroom life is well underway, and attention to mapping, developmental milestones, situational context, method and congruence between perspectives should encourage a more systematic knowledge-base about student perceptions of schooling. The potential contribution of our efforts in this area is underscored by the comment of a 15-year-old pupil in a Birmingham (England) school:

> I don't think any teacher can understand the problems pupils have; they do not stop and listen long enough. . . If they did, the relationship between pupils and teachers would improve. (Meighan, 1978, p. 91)

Our conceptualization of classroom life has not enabled us to easily learn from the perspective of students. Perhaps, this growing body of research will help us to hear what they have to say.

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